Scenario: #1 - Habitat Monitoring and Management, Very-Low Intensity and Complexity

Scenario Description:

This scenario is applied to wetlands within all landuse types including those with wildlife as a modifier, where any resource concern is identified for wildlife, and where very-low intensity and complexity of monitoring or management will treat the identified resource concern. Only 1-2 monitoring efforts are needed and each requiring less than 2 people and 4 hours per effort. The adaptive management actions such as cutting of limbs that are impeding access of birds into nest boxs, replacing damaged fence markers, cleaning of nest structures and debris around other structures requires only hand labor and less than 16 hours of labor per year.

Before Situation:

Wetland wildlife habitat is deficient due to the absence of annual monitoring and adaptive management actions of very-low intensity and complexity.

After Situation:

Wetland wildlife habitat is improved by implementation of annual adaptive management actions of very-low intensity and complexity.

Scenario Feature Measure: Monitoring efforts and adaptive management actions

Scenario Unit: Acre

Scenario Typical Size: 640

Scenario Cost: \$596.59 Scenario Cost/Unit: \$0.93

Cost Details (by categor	y):			Price		
Component Name	ID	Component Description	Unit	(\$/unit)	Quantity	Cost
Equipment/Installation						
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$34.81	3	\$104.43
Rangeland/grassland field monitoring kit	967	Miscellaneous tools needed to complete rangeland/grassland monitoring. Materials may include camera, clippers, plot frame, scale, tape measure, etc. Includes materials and shipping only.	Each	\$45.96	1	\$45.96
Chainsaw	937	Equipment and power unit costs. Labor not included.	Hour	\$5.89	2	\$11.78
Labor						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$17.72	10	\$177.20
Specialist Labor	235	Labor requiring a specialized skill set: Includes Agronomists, Foresters, Biologists, etc. to provide additional technical information during the planning and implementation of the practice. Does not include NRCS or TSP services.	Hour	\$85.74	3	\$257.22

Scenario: #2 - Wetland Widlife Habitat Monitoring and Management, Low Intensity and Complexity

Scenario Description:

This scenario is applied to wetlands on landuse types including those with wildlife as a modifier, where any resource concern is identified for wildlife, and where low intensity and complexity of monitoring or management will treat the identified resource concern. Only 1-2 monitoring efforts are needed and each requiring less than 2 people and 4 hours per effort. The adaptive management actions such as cutting of limbs that are impeding access of birds into nest boxs, replacing damaged fence markers, cleaning of nest structures and debris around other structures requires only hand labor and less than 8 hours labor per year.

Before Situation:

Wetland wildlife habitat is deficient due to the absence of annual monitoring and adaptive management actions of low intensity and complexity.

After Situation:

Widlife habitat is improved by implementation of annual adaptive management actions of low intensity and complexity.

Scenario Feature Measure: Monitoring efforts and adaptive management actions

Scenario Unit: Acre

Scenario Typical Size: 160

Scenario Cost: \$485.33 Scenario Cost/Unit: \$3.03

Cost Details (by categor	y):			Price		
Component Name	ID	Component Description	Unit	(\$/unit)	Quantity	Cost
Equipment/Installation						
Chainsaw	937	Equipment and power unit costs. Labor not included.	Hour	\$5.89	1	\$5.89
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$34.81	1.5	\$52.22
Rangeland/grassland field monitoring kit	967	Miscellaneous tools needed to complete rangeland/grassland monitoring. Materials may include camera, clippers, plot frame, scale, tape measure, etc. Includes materials and shipping only.	Each	\$45.96	1	\$45.96
Labor						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$17.72	7	\$124.04
Specialist Labor	235	Labor requiring a specialized skill set: Includes Agronomists, Foresters, Biologists, etc. to provide additional technical information during the planning and implementation of the practice. Does not include NRCS or TSP services.	Hour	\$85.74	3	\$257.22

Scenario: #3 - Habitat Monitoring and Management, Medium Intensity and Complexity

Scenario Description:

This scenario is applied to wetland areas located on all landuse types including those with wildlife as a modifier, where any resource concern is identified for wildlife, and where medium intensity and complexity of monitoring or management will treat the identified resource concern. Two or three monitoring efforts are needed and each requiring less than 2 people and less than 8 hours per effort. Two or three adaptive management efforts are required (such as cutting of limbs that are impeding access of birds into nest boxes, replacing damaged fence markers, cleaning of nest structures and debris around other structures). The adaptive mgmt requires hand labor and the occasional use of light equipment. A crew of 2 is needed for the hand labor efforts and the crew will require less than 16 total hours of labor per mgmt effort. Mowing of roads and trail is required to provide access for monitoring and management.

Before Situation:

Wetland wildlife habitat is deficient due to the absence of annual monitoring and adaptive management actions of medium intensity and complexity.

After Situation:

wetland wildlife habitat is improved by implementation of annual adaptive management actions of medium intensity and complexity.

Scenario Feature Measure: Monitoring efforts and adaptive management actions

Scenario Unit: Acre

Scenario Typical Size: 160

Scenario Cost: \$1,826.88 Scenario Cost/Unit: \$11.42

Cost Details (by category	st Details (by category):					
Component Name	ID	Component Description	Unit	(\$/unit)	Quantity	Cost
Equipment/Installation						
Chainsaw	937	Equipment and power unit costs. Labor not included.	Hour	\$5.89	4	\$23.56
Rangeland/grassland field monitoring kit	967	Miscellaneous tools needed to complete rangeland/grassland monitoring. Materials may include camera, clippers, plot frame, scale, tape measure, etc. Includes materials and shipping only.	Each	\$45.96	1	\$45.96
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$34.81	6	\$208.86
Mower, Bush Hog	940	Equipment and power unit costs. Labor not included.	Hour	\$47.56	5	\$237.80
Labor			·		•	•
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$17.72	20	\$354.40
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$19.78	5	\$98.90
Specialist Labor	235	Labor requiring a specialized skill set: Includes Agronomists, Foresters, Biologists, etc. to provide additional technical information during the planning and implementation of the practice. Does not include NRCS or TSP services	Hour	\$85.74	10	\$857.40

Scenario: #4 - Habitat Monitoring and Management, High Intensity and Complexity

Scenario Description:

This scenario is applied to all landuse types including those with wildlife as a modifier, where any resource concern is identified for wildlife, and where high intensity and complexity of monitoring or management will treat the identified resource concern. Two - four monitoring efforts are needed and each requiring less than 2 people and less than 8 hours per effort. The adaptive management actions (2 - 5 efforts) such as cutting of limbs that are impeding access of birds into nest boxes, replacing damaged fence markers, cleaning of nest structures and debris around other structures requires hand labor and light equipment, requiring a 2-person crew less than 1 day per effort.

Before Situation:

Wildlife habitat is deficient due to the absence of annual monitoring and adaptive management actions of high intensity and complexity.

After Situation:

Wildlife habitat is improved by implementation of annual adaptive management actions of high intensity and complexity.

Scenario Feature Measure: Monitoring efforts and adaptive management actions

Scenario Unit: Acre

Scenario Typical Size: 80

Scenario Cost: \$2,232.56 Scenario Cost/Unit: \$27.91

Cost Details (by category) Component Name	, ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation		·		(O) airie		
Hydraulic Excavator, 1 CY	931	Track mounted hydraulic excavator with bucket capacity range of 0.8 to 1.5 CY. Equipment and power unit costs. Labor not included.	Hour	\$106.80	4	\$427.20
Chainsaw	937	Equipment and power unit costs. Labor not included.	Hour	\$5.89	8	\$47.12
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$34.81	6	\$208.86
Mower, Bush Hog	940	Equipment and power unit costs. Labor not included.	Hour	\$47.56	3	\$142.68
Rangeland/grassland field monitoring kit	967	Miscellaneous tools needed to complete rangeland/grassland monitoring. Materials may include camera, clippers, plot frame, scale, tape measure, etc. Includes materials and shipping only.	Each	\$45.96	1	\$45.96
Labor					·	•
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$19.78	3	\$59.34
Equipment Operators, Heavy	233	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	\$22.40	4	\$89.60
Specialist Labor	235	Labor requiring a specialized skill set: Includes Agronomists, Foresters, Biologists, etc. to provide additional technical information during the planning and implementation of the practice. Does not include NRCS or TSP services.	Hour	\$85.74	10	\$857.40
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$17.72	20	\$354.40

Scenario: #5 - Development of Shallow Micro-Topographic Features with Normal Farming Equipment.

Scenario Description:

This typical scenario is installed on non-forested wetlands, including openlands prior to tree planting. The purpose is to increase plant species richness and diversity, create micro-habitats for invertebrates, increase water infiltration and reduce run-off. The area is plowed to loosen the soil. Then the soil is excavated with normal farming equipment (e.g. tractor and box-blade) to a depth of 2-6 inches and immediately deposited. This lowering and raising of a box-blade restores the original micro-topographic features (6' X 6' depressions and mounds) common to most landscapes and landforms prior to clearing, tilling, and annual mowing. Restoration of shallow but frequent micro-topographic features has been lost by the smoothing action of tillage, mowing and the original land-clearing. This scenario it typically implemented for ecosystem restoration projects such as prairie restoration and range-land restoration, and particularly on moderately well-drained soils.

Before Situation:

Micro-topographic features have been eliminated by past conversion to agriculture and/or past cultural practices. This has resulted in the lack of micro-soil moisture gradients within the field. The opportunity for plant species richness and diversity is minimal. Water storage potential is absent. Water rapidly runs off the field after rains and snow melt, carrying nutrients, solids and surface organic materials. No micro-ponding sites are available for invertebrate use.

After Situation:

Shallow micro-depressions and mounds are numerous. This varied micro-topographic features provided varied moisture gradients required for high plant species richness and diversity. Wildlife habitat is improved. Water conservation is increased, increasing vegetative production. Water quality is improved as the micro depressions capture sediments, nutrients and manure. Over time, the micro-depressions become more nutrient rich than the micro-highs, further increasing plant species richness.

Scenario Feature Measure: hours of tractor use

Scenario Unit: Acre

Scenario Typical Size: 20

Scenario Cost: \$719.66 Scenario Cost/Unit: \$35.98

Cost Details (by category):

Cost Details (by categor	t Details (by category):					
Component Name	ID	Component Description	Unit	(\$/unit)	Quantity	Cost
Equipment/Installation						
Tillage, Primary	94	Includes heavy disking (offset) or chisel plow. Includes equipment, power unit and labor costs.	Acre	\$14.71	20	\$294.20
Tractor, agricultural, 120 HP	96	Agricultural tractor with horsepower range of 90 to 140. Equipment and power unit costs. Labor not included.	Hour	\$51.13	6	\$306.78
Labor				·		
Equipment Operators, Light	23	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$19.78	6	\$118.68

Scenario: #6 - Development of Deep Micro-Topographic Features with Heavy Equipment.

Scenario Description:

This typical scenario is installed on non-forested wetlands (or open land prior to tree planting), where micro-topographic features have been removed by past farming and/or ranching cultural practices. The purpose is to increase plant species richness and diversity, create micro-habitats for invertebrates, increase water infiltration and reduce run-off. The area is plowed 2 weeks prior to excavation to kill existing vegetation and allow for proper dirt work. Then the soil is excavated with track equipment (dozer) to a depth of 6-12 inches and immediately deposited. This lowering and raising of a dozer -blade restores the original deep micro-topographic features (10' X10' depressions and mounds) common to many landscapes and landforms prior to the lands conversion to agricultural lands. This scenario it typically implemented for ecosystem restoration projects such as wetland restoration (herbaceous or prior to planting of woody species), prairie restoration and range-land restoration. It is most commonly applied to well-drained soils as the purpose is for the micro-depression to pond water for short duration (less than 7 days).

Before Situation:

Micro-topographic features have been eliminated by past conversion to agriculture and/or past cultural practices. This has resulted in the lack of micro-soil moisture gradients within the field. The opportunity for plant species richness and diversity is minimal. Water storage potential is absent. Water rapidly runs off the field after rains and snow melt, carrying nutrients, solids and surface organic materials. No micro-ponding sites are available aquatic dependent invertebrates. Vertebrate wildlife habitat is lacking diversity.

After Situation:

Deep (6" - 12" depth) micro-depressions and mounds are numerous. These varied micro-topographic features provide varied moisture gradients required for development of high plant species richness and diversity. Wildlife habitat is improved. Water conservation is increased, increasing vegetative production. Water quality is improved as the deep micro-depressions capture sediments, nutrients and manure. Over time, the micro-depressions become more nutrient rich than the micro-highs, further increasing plant species richness.

Scenario Feature Measure: Hours

Scenario Unit: Acre

Scenario Typical Size: 20

Scenario Cost: \$1,978.01 Scenario Cost/Unit: \$98.90

Cost Details (by category): Price Unit **Component Name Component Description Quantity Cost** (\$/unit) Equipment/Installation Dozer, 200 HP 928 Track mounted Dozer with horsepower range of 160 to Hour \$174.58 6 \$1,047.48 250. Equipment and power unit costs. Labor not included. 20 \$294.20 Tillage, Primary 946 Includes heavy disking (offset) or chisel plow. Includes Acre \$14.71 equipment, power unit and labor costs. Labor Equipment Operators, Heavy 233 Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Hour \$22.40 8 \$179.20 Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons. Mobilization 1140 Equipment >150HP or typical weights greater than 30,000 \$457.13 1 \$457.13 Mobilization, large equipment Each pounds or loads requiring over width or over length permits.

Scenario: #7 - Monitoring, Management

Scenario Description:

Setting is any lands with the potential to provide wetland wildlife habitat and that potential is not currently being captured. The identified wetland wildlife habitat limiting factors can be restored, enhanced or created, with the application of this practice alone, or in combination with other supporting and facilitating practices. Monitoring will be used to determine if the conservation system meets or exceeds the minimum quality criteria for the targeted wildlife. Management will be implemented based on the findings of the habitat assessment and monitoring. Wetland wildlife habitat management and monitoring needed to treat the resource concerns may require training, no qualitative data assessment, no water quality monitoring and is medium in complexity and intensity. Examples of prescribed monitoring, include but are not limited to: photo points taken, documentation of annual management, remote cameras, documenting wildlife sightings, documenting location and presence of invasive species and condition of vegetative and structural treatments and occurance of damage to habitat. The planner will specify locations and identify the methods to the customer who will implement the monitoring and management plan. Facilitating practices may include but not limited to: 314, 315, 327, 342, 380, 384, 390, 391, 422, 472, 490, 511, 528, 550, 612, 647, 650, 654, 660, 666.

Before Situation:

Existing degraded plant conditions and resulting inadequate habitat for fish and wildlife have resulting in low use of the area by target and associated wetland wildlife species.

After Situation:

Based on the results of a State-approved upland wildlife habitat assessment process, the application of wetland wildlife habitat management efforts and prescribed monitoring have been implemented. With the application of this practice alone, or in combination with other supporting and facilitating practices, the inadequate wetland wildlife habitat conditions have addressed. Monitoring has maximized the benefits of the needed upland wildlife habitat treatment efforts.

Scenario Feature Measure: Acres Managed and Monitored.

Scenario Unit: Acre

Scenario Typical Size: 100

Scenario Cost: \$448.61 Scenario Cost/Unit: \$4.49

Cost Details (by category Component Name): ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
All terrain vehicles, ATV	965	Includes equipment, power unit and labor costs.	Hour	\$28.69	0.5	\$14.35
Satellite imagery, aerial photography, infrared	966	Infrared imagery	Acre	\$0.16	100	\$16.00
Labor						
Specialist Labor		Labor requiring a specialized skill set: Includes Agronomists, Foresters, Biologists, etc. to provide additional technical information during the planning and implementation of the practice. Does not include NRCS or TSP services.	Hour	\$85.74	3	\$257.22
Mobilization						
Mobilization, small equipment		Equipment <70 HP but can't be transported by a pick-up truck or with typical weights between 3,500 to 14,000 pounds.	Each	\$161.04	1	\$161.04

Practice: 644 - Wetland Wildlife Habitat Management Scenario: #8 - Topoggraphic Feature Creation, High

Scenario Description:

Corrective measures will require the use of equipment 150 HP in size or larger due to current site conditions and implementation techniques. The setting is all landuses, but typically is on lands used for the production of agricultural products, where the slope gradient is less than two percent and soils that are not excessivly drained, that are being converted back to wetland habitats for fish and wildlife. The State-approved habitat evaluation or appraisal found that a limiting factor for wetland wildlife is the absence of sufficient variability in microtopograpic releif in the area. The construction of low intensity and low complexity topographic features will provide for diverse soil hydrologic conditions needed to treat the degraded plant condition and/or inadequate habitat for wetland wildlife. The contruction of micro and macro topographic features will require the use of equipment 150 HP in size or larger due to current site conditions and implementation techniques. Appropriate equipment (i.e. – Dozer, Excavator, etc) will be used to construct planned topographic features essential for identified species.

Before Situation:

The site lacks sufficient micro- and macrotopographic features needed for optimal wetland wildlife habitat for target species. Typically the site has been previously manipulated and utilized for agricultural production. With the loss of ridges and swales and other topographic features scattered throughout the site, both plant and animal species that are dependent on the microenvironments created by these features are no longer present or are in decline within the planning unit.

After Situation:

Appropriate equipment (i.e. – Dozer, Excavator, etc) was used to construct planned topographic features essential for identified species. As a result of the installation, adequate habitat structure such as micro and macro topographic features will provide for diverse soil hydrologic conditions needed to treat the degraded plant condition and/or inadequate habitat for wetland wildlife.

Scenario Feature Measure: number and size of constructed features

Scenario Unit: Acre

Scenario Typical Size: 100

Scenario Cost: \$407,759.50 Scenario Cost/Unit: \$4,077.60

Cost Details (by category): Price **Component Name Component Description** Unit **Quantity Cost** (\$/unit) Acquisition of Technical Knowledge Training, Workshops 294 Educational seminar or series of meetings emphasizing Each \$44.18 1 \$44.18 interaction and exchange of information among a usually small number of participants. Equipment/Installation Dozer, 200 HP 928 Track mounted Dozer with horsepower range of 160 to Hour \$174.58 1000 \$174,580.00 250. Equipment and power unit costs. Labor not included. Hydraulic Excavator, 2 CY 932 Track mounted hydraulic excavator with bucket capacity \$178.53 1000 \$178,530.00 Hour range of 1.5 to 2.5 CY. Equipment and power unit costs. Labor not included. \$16.00 966 Infrared imagery \$0.16 100 Satellite imagery, aerial Acre photography, infrared Labor Equipment Operators, Heavy 233 Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Hour \$22.40 2000 \$44,800.00 Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons. 234 Labor involving supervision or management activities. \$32.10 248 \$7.960.80 Hour Supervisor or Manager Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc. Mobilization Mobilization, large equipment 1140 Equipment >150HP or typical weights greater than 30,000 Each \$457.13 \$1,828.52 pounds or loads requiring over width or over length permits.

Scenario: #9 - Mottled Duck Habitat, wetland component-activity #5

Scenario Description:

Used on adjacent grassland and wetland components to manipulate water levels to provide nesting and brooding habitat for mottled ducks and wintering habitat for other water birds through specific management objectives

Before Situation:

Currently these agricultural fields do not provide habitat for waterfowl/shorebirds. Grassland and wetland components are typically not managed adequately to provide suitable nesting and brooding habitat for mottled ducks

After Situation:

Wetland components are managed so that shallow water habitat is available from February 1 through July 31, with no more than 50% of the area covered by tall, emergent vegetation.

Scenario Feature Measure:

Scenario Unit: Acre

Scenario Typical Size: 250

Scenario Cost: \$2,409.92 Scenario Cost/Unit: \$9.64

Cost Details (by category):

cost Betains (by cate	Price					
Component Name	ID	Component Description	Unit	(\$/unit)	Quantity	Cost
Labor						
General Labor		Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement,	Hour	\$17.72	136	\$2,409.92
		materials spreader, flagger, etc.				

Scenario: #10 - Close Risers by Nov.1-Feb.15

Scenario Description:

This scenario addresses inadequate habitat for fish and wildlife on cropland and/or moist soil areas. The resource concern is addressed by providing shallow water habitat for wildlife such as shorebirds, waterfowl, wading birds, mammals, fish, reptiles, amphibians, and other species that require shallow water for at least part of their life cycle. Sites are flooded up to a depth of 18" with an average depth of 9". Water is provided by placing boards in risers of water control structures by November 1 to catch precipitation. Removal of boards after February 15 allows area to drain. Associated practices are P.C. 587, Structure for Water Control and P.C. 356, Dikes.

Before Situation:

There is inadequate habitat to provide optimum resting, nesting, and feeding habitat for waterfowl, shorebirds, and other wildlife (amphibians, reptiles, mammals, invertebrates, etc.).

After Situation:

A single or series of shallow water areas that are managed per standard and specification. Water levels are regulated to maintain temporary wildlife habitat. Water control structures are closed by November 1 and held through February 15 to catch rainfall. Depths are based on actual rainfall for that year; based on climatic data, assume enough rainfall to average 6-8 inches. The producer manages the timing and duration of water required for different species of waterfowl/shorebirds. This management will benefit wildlife while minimizing nutrient export and aquifer depletion. Flooded sites vary from mudflats to water depths of 18" with an average depth of 9". The hydrologic conditions of ponding and saturation (frequency, depth, duration, timing) provides optimum seasonal habitat for waterfowl, shorebirds, and other wildlife (amphibians, reptiles, mammals, invertebrates, etc.). If needed and dikes or water control structures are not currently present on the fields planned to be flooded, these practices may be planned for the same fields and cost shared under Structure for Water Control (587) and Dike (356). Depending on local conditions, other Conservation Practices may also be required.

Scenario Feature Measure:

Scenario Unit: Acre

Scenario Typical Size: 15

Scenario Cost: \$141.76 Scenario Cost/Unit: \$9.45

Cost Details (by category):

Component Name	ID	Component Description	Unit	(\$/unit)	Quantity	Cost
Labor						
General Labor	23	1 Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$17.72	8	\$141.76

Drico